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CENTRAL INTELLIGENCE AGENCY

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1. The Moscow Stankolit Works (Moskovski Zavod Stankolit), located at 20 Skladochnaya ulitsa, in the Dzerzhinski District of Moscow, is controlled by the Ministry of Machine Tool Construction of the USSR.

2. The Savelovskaya Railway, Oktyabrskaya Railway, and Kalininskaya Railway, which proceed in different directions, are comparatively near the works. A factory branch line runs from the Kalininskaya Railway via Annenkovskaya ul., passing near the Borets and Stankolit Works.

3. The Stankolit Works was started in 1931 and completed in 1934. At that time, the works was controlled by the Central Administration of Machine Tool and Tool Industry of the People's Commissariat of Heavy Industry of the USSR. The works was initially used as an iron foundry, producing iron castings mainly for the machine tool construction industry (90 percent) and for other branches of industry (5.5 to 10 percent). At the beginning of 1947, construction of a Bessemer converter for steel was started. The converter began working in the autumn of 1947.

Production

4. Iron castings from cupola furnaces, steel castings from the small Bessemer converter, and modified pig-iron castings are produced. The castings include mounts (stanina) for machine tools, bed plates (osnovaniye) for mounts, headstocks and tailstocks, capstans, machine tool frames, apron bodies (korpus fartuka), gear boxes, plates of various kinds, brackets, carriage bodies (korpus supporta), reducer bodies (korpus reduktora), upper lids, and many small parts such as levers, rings, brushes, and hinges.

5. The foundries are divided, according to the sizes of castings they produce, into large castings shop, medium castings shop, and small castings shop.

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Methods of Production

6. In 1947, the large castings shop began converting to the mechanized conveyer system of production. The change was completed at the end of 1947. This method of production almost doubled the productive capacity of the shop.

7. The section for large castings produces castings by the conveyer system for mounts for machine tools, bedplates for mounts, headstocks, etc. This section occupies premises about 60 meters long and about 25 meters wide, which are adjacent to and somewhat larger than the shop for the conveyer system production of cores, including the area occupied by the drying ovens. 50X1-HUM

8. For molding upper and lower casting boxes, the conveyer belt is equipped with two tumbling machines, each with a lifting capacity of about five tons. Cores are produced by the conveyer belt method. They are molded by reversible tumbling machines VF 13 and VF 20. These machines are produced by the Krasnaya Presnya Works, Moscow, [redacted] The molding mixture for the cores is fed from feed bins. The filling of the molds takes place at one end of the conveyer from buckets which move along a monorail. The drying plates move on overhead rails. Cores are taken to the drying ovens and from there by roller conveyer to the assembly section in the conveyer room. 50X1-HUM

9. After passing the cooling section of the conveyer, the mold is taken to the knocking-out grids (vybivochnaya reshetka) for removal of the cores by a pneumatic knocking-out machine. Castings, when removed from the molds, are lowered into a hatch and from there sent to the trimming shop (obrubochny tsekh), which is situated in the lower premises, for cleaning and trimming.

10. Early in 1947, the works started converting to the so-called "damp molding" (syraya formovka) method, i.e., pouring molten metal into damp molds for producing large machine tool castings.

11. The compressing of molding mixtures on large reversible shaking machines, not by means of sand slingers, as formerly, has been introduced into the works. This has reduced the amount of labor required for the entire casting process by about 50 percent. For instance, the time required to prepare a mount by the new method (including molding, preparation of cores, assembling, trimming, and cleaning) for the turning and threading lathe DIP 20 M has been reduced from 40 to 27 hours. The time required for the preparation of the bed plate of the mount of the same lathe has been reduced from 80 to 38 hours. This lathe is mass-produced on a large scale by the Krasny Proletarii Machine Tool Factory. The time required for casting the mount of the turret lathe IM 36, which is mass-produced on a large scale by the Ordzhonikidze Factory, Moscow, has been reduced from 36 to 27 hours. The mount for the universal surface grinding machine 372 AM, which is mass-produced by the MSZ Factory, Moscow, now requires 25 hours instead of 35. The castings for these three lathes are made by the Stankolit Works. 50X1-HUM

12. In 1948, for the production of cores of large size, the works changed from the use of clay mixtures to the use of sand mixtures, which possess greater mobility and make it possible to employ jolt-ram machines for molding cores. For molding small and medium-sized cores, the works possesses hand-operated tumbling machines, types S-3 and S-4, produced by the Krasnaya Presnya Factory, Moscow. These machines are copies [redacted] 50X1-HUM

13. Cores are also produced by the sand-blast machine S-7, which is a copy of the foreign Daimler machine and is manufactured by the Krasnaya Presnya Factory. Other sand-blast machines of Soviet and foreign make are also used.

14. The molding mixture for facing is composed of burnt earth (gorelaya zemlya) recovered from broken up molds (30-40 percent of total), Lyubertsy sand K 50/100 (35-40 percent), yellow sand from the Repinski Quarry K/270 (10-15 percent), and coal of various kinds (12-15 percent). As a rule, so-called "forge coal" is used. The molding mixture used as a filler is composed of burnt earth (about 92 percent), large grained sand K 70/40 from Lukhovitsky Quarry (about 6 percent), and ground clay from the Kudinovski Quarry (about 2 percent).

15. As a facing to prevent burning, the works employs a smearing substance or paint composed of molasses (55-60 percent) and silver graphite (40-45 percent) (other substances containing talcum or chamotte are also used).

16. For core mixtures, the works uses sand from the Lyubertsy Quarry, dextrin or pitch paste, sulfite slops (barda), binders of various kinds, and ground fire-proof clay. Sulfite slops are obtained from the Krasnokamski Chemical Factory and partly from the Balakhna Factory in liquid form, or in a solid form designated BF. Peat pitch paste is obtained from the Redkinski Factory, Moscow Oblast.

17. All large cores are covered with paint composed of black graphite (about 90 percent), molasses (about 8 percent), and linseed oil (about 2 percent).

18. The binders used for core mixtures are designated 4GV, 4GB, 4GR, 4GU. The 4GR binder is a solution of castor oil and colophony in Grozny white spirit. The 4GB binder is a solution of porpoise fat and colophony in Grozny white spirit. The 4GU binder is a solution of cotton seed oil and colophony in Grozny white spirit.

19. For cementing assembled cores, the works formerly used sulfite lye but in 1948 started to use sulfite slops and a somewhat larger quantity of clay and water. The joints between the cores are packed with a composition of black graphite, Lyubertsy sand, yellow Repinski sand, dextrin, and clay, and afterwards are painted.

Actual Output

20. [redacted] 50X1-HUM the figures given below are considered [redacted] to be approximately correct:

1947 output was 22,000-24,000 tons of pig-iron castings
1948 " probably exceeded 30,000 tons of pig-iron castings
1949 " exceeded that of 1948

21. The increased output is the result of mechanization, employment of the conveyor system, and improvement in organization. [redacted] 50X1-HUM assessing the quantity of machine tool castings produced, as, in the case of some machine tools, Stankolit produces nearly all the castings and, in other cases, only the large or special castings. In the course of a year, 50X1-HUM the Stankolit Works produced castings for 2,000 DIP 20 M machine tools for the Krasny Proletarii Factory; and in the course of two years castings for 3,000 IM 36 machine tools for the Ordzhonikidze Factory. Two thousand two hundred tons of castings (mounts, gear box bodies, frames, aprons, boxes, etc) were required for 2,000 DIP 20 M machine tools. Five percent of spare castings are produced to replace rejects. In 1948, the Stankolit Works produced 2,800 tons of castings for 1,000 type 137 machine tools manufactured by the Ordzhonikidze Factory. Orders for this machine tool have now stopped. A great many castings are also delivered to the Moscow Internal Grinding 50X1-HUM Machine Factory; but, generally speaking, the orders are smaller than for those of the two previously mentioned factories. [redacted] in 1947 the Stankolit Works produced castings for at least 10,000 machine tools.

22. The output of castings has increased considerably in 1949. More precise castings, which require less time to machine at consumer factories, are now being produced. The casting for a mount of a DIP 20 M machine formerly 50X1-HUM weighed about 700 kgs after having been cleared and trimmed; under present conditions, it weighs about 600 kgs. [redacted] rejections in the small castings shop reached 10 percent in 1947, which was considered satisfactory.

Source of Raw Material

23. Material for molding mixtures and core mixtures are received from the following:

a. Molding sand K 50/100 from Lyubertsy Quarry (Lyubertsy Station, Moscow Oblast) and from Lukhovitsy Quarry (Lukhovitsy Station, Moscow Oblast).

b. Molding sand P 50/100 from Lyubertsy Quarry.

c. Sand Marks P 200/270 and ZH 200/270 from Repinski Quarry (Kolomna Station, Moscow Oblast).

d. Clay from Kudinovski Quarry, Moscow Oblast, and Suvorovski Quarry, Tula Oblast.

Personnel

24.

Director		A. F. Ryabtsev
Chief Engineer		P. F. Kuleshev
Chief Metallurgist		S. A. Skomorokhov
Deputy Chief Metallurgist	Engineer-Technologist	A. Ya. Volynski
Production Chief	Engineer	Bakhan
Chief of the Laboratory	"	Kletskin
Chief of the Large Castings Shop	"	Mikhailov
Chief of the First Foundry Shop for Small Parts	"	Abashkin
Chief of the Core Shop	"	Volkova
Secretary of the Works Party Organization		V. F. Dudukin
President of the Works Party Committee		V. V. Makarov
	Engineer-Technologist	N. I. Mozgovoi
	" "	Bikhan
	" "	Shtein
	Engineer	I. A. Onufrev (Onufriyev?)
	"	Ostakhov

25. a. Engineer Mikhailov organized the conveyer line for large castings, which has given very good results.

b. Engineer-Technologist N. I. Mozgovoi constructed a small Bessemer converter for steel castings, which made it possible to produce steel of very good quality with small content of gases and great mechanical strength by blowing pure oxygen through pig-iron in the converter. This steel is used in the production of castings of complicated shape which were usually produced from electric steel. Mozgovoi is a specialist on steel castings and has contributed several articles to scientific journals.

c. Engineer Abashkin introduced the smaller conveyer line which is used in conjunction with some of the products.

26. The core shop employs over 100 women. [redacted] 50X1-HUM number of personnel [redacted] are about 3,000. Most of the personnel live in the vicinity of the works and about a third live at Butyrski Khutor, which is situated about 1.5 km from the works. Several three-storied buildings for personnel of the works are being built at Butyrski Khutor.

27. Work is carried on in three shifts but not in accordance with the "parallel system", in which each shift carries out approximately identical work. The night shift, which works from midnight to 0800 hours, carries out preparatory work but does not fill the molds with molten metal. The day shift, which works from 0800 to 1600 hours, fills the molds in addition to doing other work. The evening shift works from 1600 hours to midnight.

Destination of Products

28. Castings are delivered chiefly to Moscow machine tool factories. The chief customer is the Krasny Proletarii Factory, followed by the Moscow Ordzhonikidze Factory, Moscow Internal Grinding Machine Factory, Moscow Grinding Machine Factory. A comparatively small number of castings are sent to the Dmitrov Milling Machine Factory, Serpukhov Machine Tool Factory, Yegorevsk Machine Tool Factory, and to enterprises of other industries.

29. Orders are at present being executed for tubes for the Moscow Underground Railway and for the Stalingrad Tractor Works.

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